



A.D. 1829 N° 5762.

S P E C I F I C A T I O N

OF

JAMES FRASER.

FLUES, COOKING APPARATUS, &c.

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1855.



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Flues, Cooking Apparatus, &c.

FRASER'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JAMES FRASER, of Limehouse, in the County of Middlesex, Engineer, send greeting.

WHEREAS His most Excellent Majesty King George the Fourth, by His Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Twenty-seventh day of January, in the ninth year of His reign, did, for Himself, His heirs and successors, give and grant unto me, the said James Fraser, His especial licence that I, the said James Fraser, my executors, administrators, and assigns, or such others as I, the said James Fraser, my executors, administrators, or assigns, should at any time agree with, and no others, 5 from time to time and at all times during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "A NEW AND IMPROVED ARRANGEMENT OF A FLUE OR FLUES TO COMMUNICATE WITH THE VARIOUS PARTS OF CULINARY APPARATUS, SUCH AS STEAM, SOUP, OR WATER BOILERS, 15 OVEN OR OVENS, HOT PLATE OR PLATES, HOT CLOSET OR CLOSETS, AND STEWING STOVE OR STOVES, TO RENDER THEM MORE COMPACT, AND TO APPROPRIATE PART OF THE SAID APPARATUS TO EFFECT OTHER USEFUL PURPOSES;" in which said Letters Patent there is contained a proviso obliging me, the said James Fraser, by an instrument in writing under my hand and seal, particularly to describe and ascertain 20 the nature of my said Invention, and in what manner the same is to be performed, and to cause the same to be inrolled in His Majesty's High Court of Chancery within two calendar months next and immediately after the date of the said recited Letters Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

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NOW KNOW YE, that in compliance with the said proviso, I, the said James Fraser, do hereby declare that the nature of my said Invention, and the manner in which the same is to be performed, is described and ascertained in the several figures and explanations of the two series of plans annexed to these Presents, and numbered, first series, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and numbered, 5 second series, 1, 2, 3, and the following further explanation thereof (that is to say) :—

FIRST SERIES.

No. 1 shews a section of soot flues marked A^1 and A^2 , and of an air flue, when required, marked B, and of a damper to regulate the current 10 or draught, marked D. These flues are supposed to rest on the top of an oven or ovens, and are between the boilers and the fire-place or fire-places, when more than one are required. The damper D is so constructed that when it closes one aperture it opens the other (as seen in No. 9), shutting up the vertical flue, preventing thus the passage of the draught upwards through A^1 , and 15 compelling the current to pass in the direction of the arrows, as in No. 2, acting round the air flue B above the oven and under the boilers, then entering the aperture seen at the back of the perspective Drawing No. 9, which receives it into the vertical vent on the right-hand side marked A^2 , after having heated the boilers. It is evident that when the damper D of No. 9 is turned down- 20 ward in the direction of the dotted lines the back aperture is then closed, the draught or current will then turn up the vent A^1 direct, without heating the boilers placed at the back of the said flues.

No. 2 shews a ground plan, the entire of which is an oven G, except that space which forms the fire-place F, the ashpit under the fire-place F, and the 25 air flue B. When there are two fire-places in the larger apparatus, as seen in No. 7, two ovens or roasters can be used for separate purposes at one and the same time, and the ends and sides of the fire-places are formed by these ovens. Thus will each oven have two of its sides applied to heat, or if more convenient, to suit local situation, both fires may be placed on the same side. 30

No. 3 is a transverse section shewing the flue A from back to breast, also the oven G, fire-place F, ashpit L, and having the damper turned up; the end also of the boiling table or hot plate C, and the mode of ventilation from that plate upwards, being a distinct flue from the soot flues A, thereby rendering it impossible for the smoke or soot to come down or fall on the boiling table or 35 hot plate C.

No. 4 shews a front section dividing the flues by one division only. The air flue is supposed sometimes not to be required. The damper D is here seen closed.

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No. 5 is a back view shewing the position of the boilers K, the dotted lines shewing a passage to the air flue B, round which the heat and smoke play, heating the air which it contains and the boilers at the same time.

No. 6 shews a boiling table or hot plate C on one side of the flues, and the 5 boilers K on the other, with the air flue B in the middle; D the damper, on one side closed, and the flue A² open to receive the current after it has acted on the boilers K.

No. 7 shews two fire-places F, and the position of two ovens G, with an oval air flue B.

10 No. 8 is a perspective view when the arrangement of the apparatus is finished, shewing by the dotted lines the ventilation from the boiling table or hot plate, as seen at No. 3.

No. 9, when joined to the plate No. 10, is supposed to be divided by plates into three flues,—that for air, when required, being in the centre; there is only 15 one division, as seen at No. 4, when no ventilating flue is required; but on every occasion the ventilation from the boiling table or hot plate becomes highly necessary and useful, as it conveys the heat and effluvia upwards.

SECOND SERIES.

AND FURTHER KNOW YE, that I, the said James Fraser, having above 20 described my new and improved arrangement of a flue or flues as applicable to culinary apparatus of a portable description, or, in other words, culinary apparatus made of metal and fixed en masse, in the first series, I, the said James Fraser, do hereby further declare the nature of my said Invention in a second series, and proceed to describe the structure of such articles as the flue or flues 25 correspond with in the construction of culinary apparatus on the most enlarged and efficient scale, such as for public institutions and the houses of men of rank and fortune, and thereby saving the consumption of fuel in the ratio of more than one third.

No. 1, second series, supposes the jamb of a kitchen fire-place displaced in 30 order to shew the peculiar construction of a steam boiler for supplying hot water or steam. B is the boiler; F is the fire-place; A is the ash pit; H is the end view of a boiling table or hot plate; K is the aperture or vent on the opposite side, through which the heat passes in order to heat the oven; I is supposed to be the off jamb. The ash pit and fire-place doors are, for greater 35 convenience, placed in front. The boiler is made so as to form not only the back of the fire, but also covers it to a considerable extent, so that a boiler only twelve inches from back to breast has eighteen inches always exposed to the fire, which is one half more than if the fire were applied to the entire bottom thereof. The boiler so constructed has also the peculiar advantage of

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being acted on by the fire from one side to the other without any flue passing at the back thereof, thereby rendering accidents by fire less liable to occur, as the excavations necessary to produce flues at the back have frequently damaged and endangered the partitions or party walls of adjoining houses or buildings. Therefore by this arrangement the boiling table or hot plate H, and the steam boiler 5 B, form two parts of a flue of a most powerful and economical description.

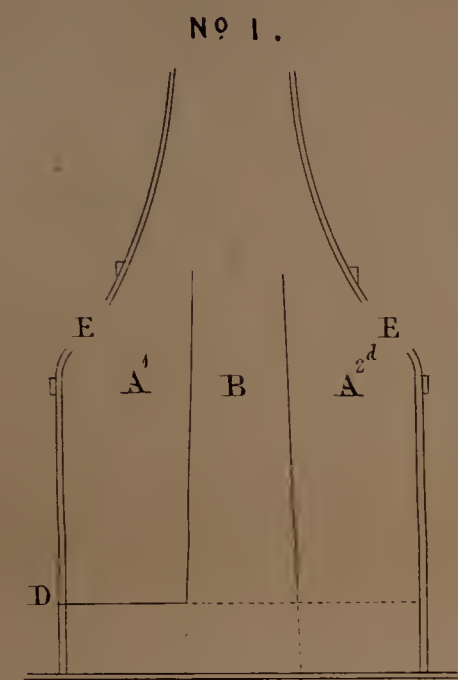
No. 2, second series, is a front view of No. 1. F is the fire-place; A is the ash pit; O is the oven; C is the hot closet, the cross line a shelf therein, and the dotted lines shew the flue whereby the heat passes off when the oven does not require heating; and when any quantity of heated air is required or wanted, 10 the recipient on the left of the ash pit A is acted upon by heat after the manner of the oven O, which hot air in my portable or metallic apparatus herein-before described in the first series can be carried with effect to any station within the influence thereof.

No. 3, second series, shews a perspective view of the arrangement of the 15 kitchen apparatus complete, and the doors at the end where the jamb is removed are merely to shew that such doors can be employed either way, and a shelf can also be placed above the boiling table or hot plate H to keep dishes and plates hot. The ventilation from the boiling table or hot plate H, as well as to carry the heat of the roasting apparatus upwards to the vent, as seen at No. 3 of the 20 first series, is practised in this series with effect, and in the most cleanly and efficient manner, nor is it necessary to mention the effective property of this boiler to generate steam to closets, heating apparatus, or culinary operations.

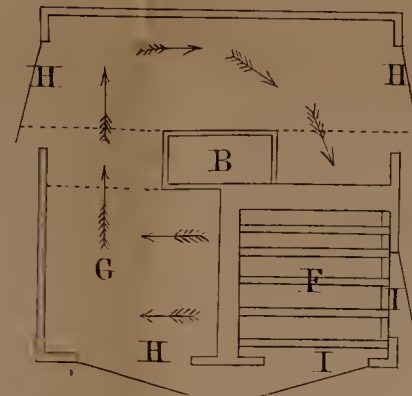
I, the said James Fraser, having now described the various parts of my new and improved arrangement of a flue or flues, I do hereby further declare, that 25 the central flue or flues, as described in the first series, is that for which I claim a Patent, and for the peculiar mode of the ventilating flues to which the soot flues give energy, and for the flue or flues as before described giving such immense power to boilers, ovens, and the roasting process, by traversing by the said flue the entire space right or left,—thus, when passing to the right, 30 embracing in its passage boiling, stewing, roasting, baking, broiling, or in short any culinary operation, without allowing the fire to escape up the flue until it has effected the before-mentioned purposes, or either of them, as the case may require; and also for the distinct mode of ventilating the boiling table or hot plate, as herein-before described. 35

In witness whereof, I, the said James Fraser, have hereunto set my hand and seal, the Twenty-sixth day of March, in the year of our Lord One thousand eight hundred and twenty-nine.

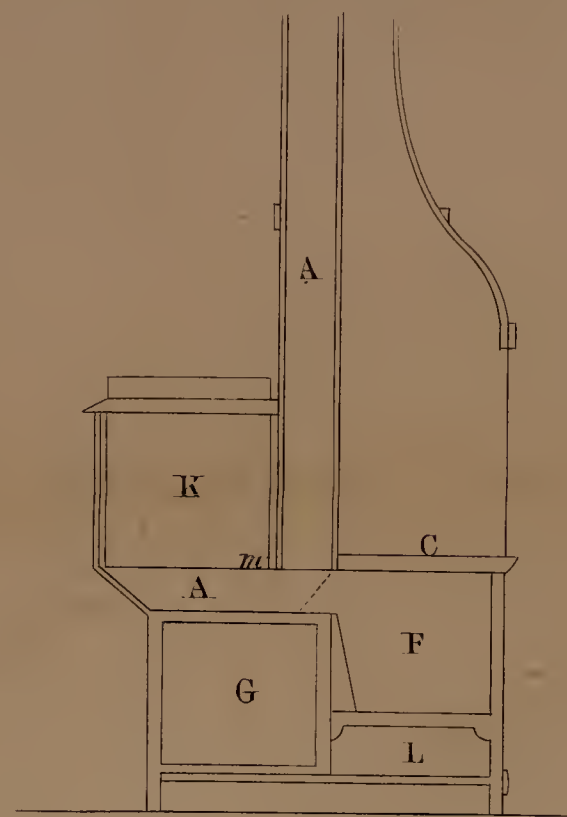
JAMES (L.S.) FRASER.



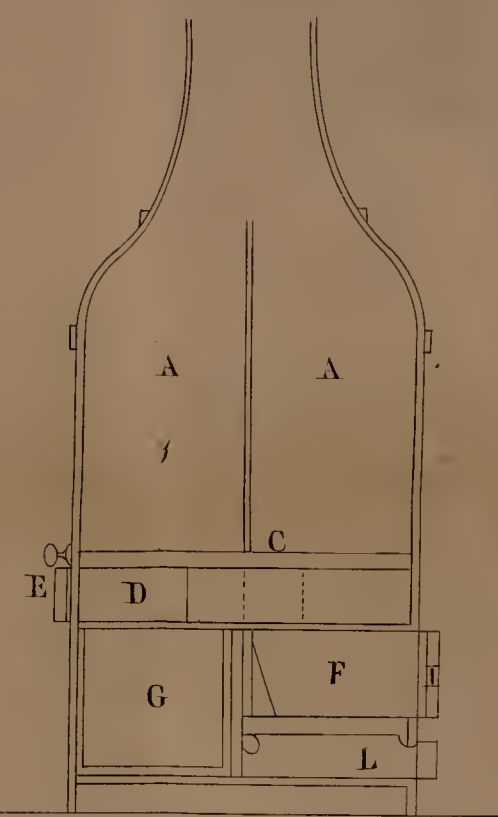
Nº 2.



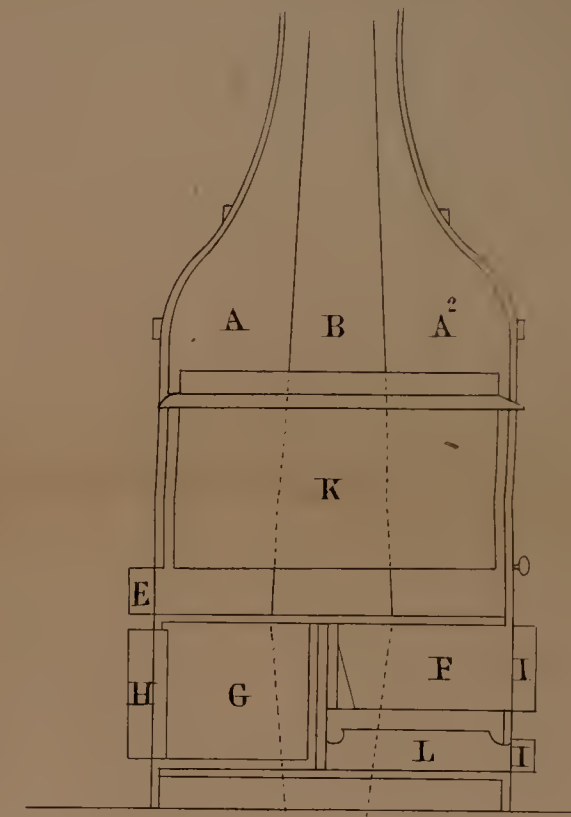
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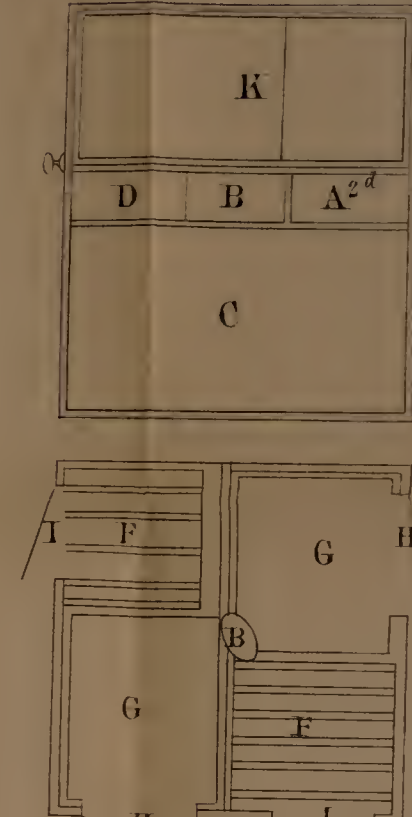
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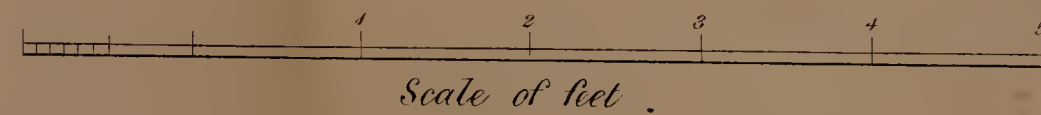
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Nº 6.



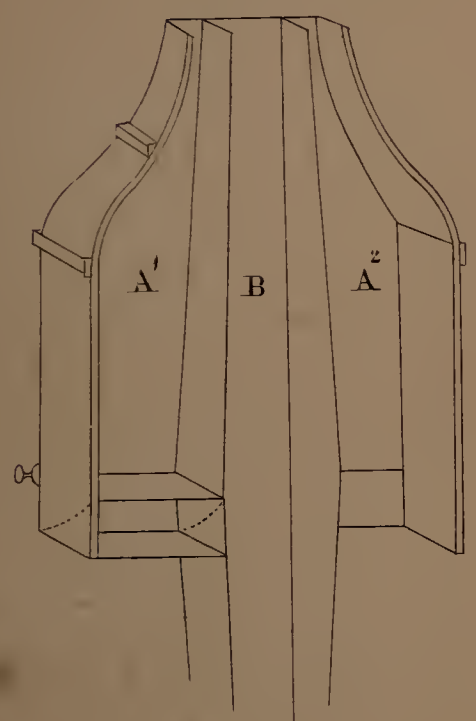
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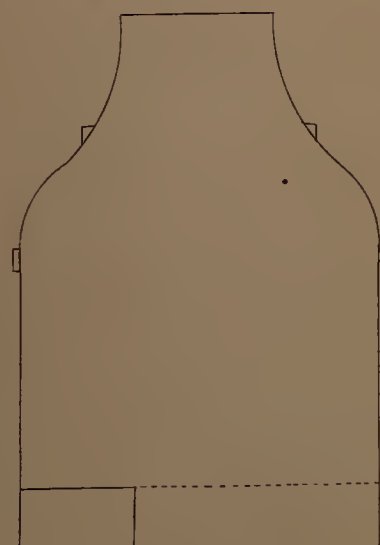
Nº 8.



Nº 9.



Nº 10.



- Nº 1 Section of Air and Soot flues with damper to regulate the current as they stand over the Oven or Ovens and separate the boilers from the hot plate
- 2 Horizontal flue, formed the upper surface of the Oven or Ovens on which they rest, the heat &c being attracted by the aperture where the damper is placed to regulate the entrance into the vertical vent, or under the Boilers as occasion may require answering the purpose of cutting off the communication between the Fire and Boilers.
- 3 Transverse Section showing the depth of the Flue from back to breast, the mode of ventilation from the hot plate upwards, with the Boilers at back also the Fire place Ash pit and end of Oven, with the damper shut, the dotted segment shews the track of the damper as it falls to close up the passage under the boiler and opens the communication direct to the Flue.
- 4 Front Section dividing the whole breadth into two Flues, when the Air Flue is not required, there is but one division, the damper is seen shut, preventing the flue from acting upon the boiler, conveying thus the heat and smoke into the vertical flue marked 1, should the fire place be on the opposite side the damper of course would be on the opposite side also.
- 5 Is a back view having the boilers with the damper as seen at Nº 3 leaving the aperture open to allow the heat to take the direction of the arrows as seen at Nº 2 thus allowing the whole heat to take a turn under the Boilers to regain the vent on the opposite side marked 2.
- 6 Shews a Hot plate place over the fire with the Boilers on the same horizon, the damper in one flue, the other open, with the breadth divided into three viz the flues on each side for smoke &c and the centre one for Air.
- 7 Shews a Plan with two fires and two Ovens the flues the same as before taking care to make both currents go in one direction, the air flue is seen in the middle and may be carried from the hold of Ships separate as a tube or may form the same as marked, yellow as in Nº 1, the dotted lines shew the passage downwards.
- 8 Perspective view of Cooking apparatus when finished. A Soot Flue, D Damper, H Oven Door, K Boiler, B Air Flue, F Fire Place, E Soot Door, I Ash Pit, L Hot plate, G Oven, I Fire Door, in hinge of Damper or pivot or some such contrivance to shut up one aperture and at the same time open the other as seen at m Nº 3.
- 9 Is a perspective view of flues which when joined at Nº 10 in front forms the whole complete having the Ovens for a base and the hot plate resting on the dotted line Nº 10.

The enrolled drawing is colored.

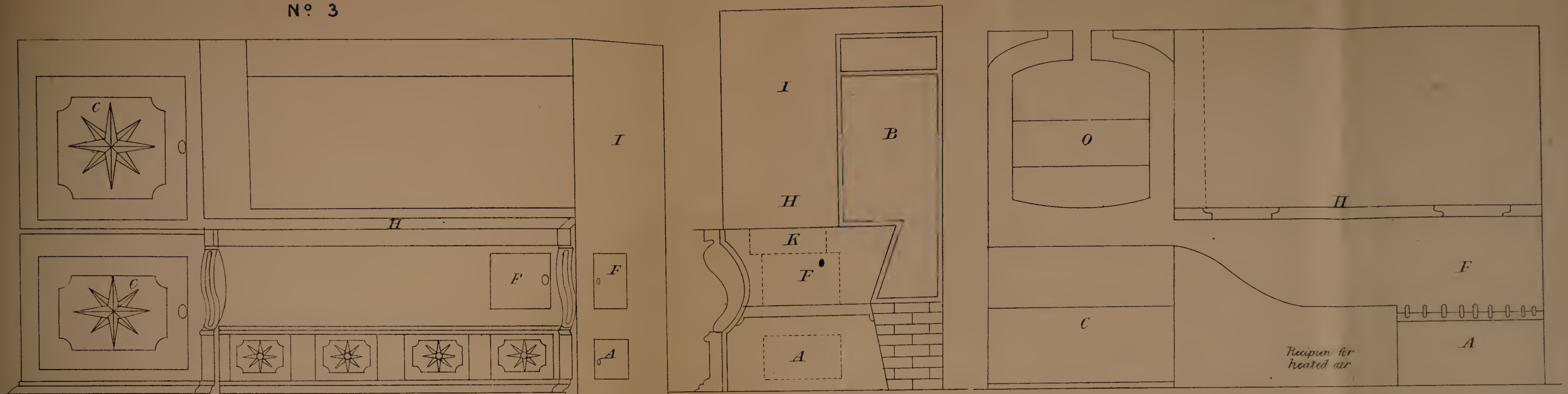
A. D. 1829. Jan. 27. N^o 5,762.
FRASER'S SPECIFICATION.

Front view of Kitchen Apparatus (second series)

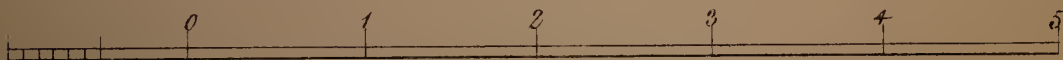
(2 SHEETS)

N^o 2.

N^o 3



Scale of Feet.



- A. Ash Pit
- B. Steam Boiler
- C. Hot Plate
- E. Fire
- H. Hot Plate
- I. Off Jamb
- K. Where flue enters oven opposite side.
- O. The Oven.

N^o 1. End view of a Steam Boiler having part exposed to the back of the Fire & part over it thereby increasing the surface in the least bulk the front is a hot plate heated by the same fire which proceeds onwards to the other side to heat an Oven of any given dimensions or heat water; the flue can be made to pass off at the further end of the boiler where the dotted lines are, without heating the Oven.

N^o 2. Is a front view of N^o 1 shewing also a Recipient for heating air, and the Furnace doors are, in all cases, either marked at end, sides, or front, as most convenient, being no part of the Patent; the Oven doors are subject to the same observation.

The enrolled drawing is colored

Drawn on Stone by Malby & Sons

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AND BE IT REMEMBERED, that on the same Twenty-sixth day of March, in the year above mentioned, the aforesaid James Fraser came before our Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained, in form above written. And also
5 the Specification aforesaid was stamped according to the tenor of the Statute in that case made and provided.

F. P. STRATFORD.

Inrolled the same Twenty-sixth day of March, in the year above written.

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1855.

